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APPLICANT : KOBE STEEL LTD;

INVENTOR : NAKAMURA SHIGEKI;

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TITLE : MANUFACTURE OF DISSIMILAR METAL PIPE JOINT FOR HIGH STRENGTH AND HIGH CORROSION RESISTANCE PIPING

ABSTRACT : PURPOSE: To maintain the originally-aimed securing of the corrosion resistance by an insert material and at the same time to provide a pipe joint of dissimilar kinds of metal by obtaining the optimum method to insert a Ta-made insert material in a joint of joining surface shape.

CONSTITUTION: A metal pipe composed of pure Ti or Ti-base alloy, or pure Zr or Zr-base alloy is termed as a first member, while a stainless steel pipe is termed as a second member. When a joint of different kinds of metal is manufactured by diffusion joining by a hot isostatic pressing method in the condition where a Ta-made insert material is inserted between the respective members, a Ta-film is formed on the joined side surface of the first and/or the second member by the physical vapor deposition method so that the thickness may be 0.5-50 μ m when forming on either side, while the totaled minimum thickness may be 0.5 μ m and the maximum thickness on one side may be 50 μ m when forming on both sides. Diffusion joining is executed by making this Ta-film as the insert material.

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